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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/616,096

07/08/2003

Dmitry Oleynikov

UNMC/0006

9525

7590

06/22/2005

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EXAMINER

IP, SHIK LUEN PAUL

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/616,096	Applicant(s) OLEYNIKOV ET AL.	
	Examiner Paul Ip	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.  
 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,9,16-18 and 23-37 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1,3-6,9,16-18 and 23-37 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 11/28/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2837

4. Claims 1, 3-6, 9, 16-18, and 23-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullick et al (2003/0167000, Provisional Application No. 60/180,960 filed on Feb. 8, 2000) in view of El Gazayerli (6,159,146).

With respect to claims 1, 3, 26, and 27, the publication to Mullick et al discloses a remote control mobile micro robot comprising a body 150, mobilization elements 140 and 142 (figure 6), a controller 32 (figure 1), a power supply 22 (figure 1), a manipulator arm 304 (figure 10) having a surgical tool (300, 400) (figures 10 and 11), and at least one sensor CCD. Mullick et al differ from the claims in that the claims recites the mobile micro robot for use inside an animal body during minimally invasive surgery with a laparoscopic surgical tool. However, the patent to El Gazayerli discloses a method and apparatus for minimally invasive fundoplication with a laparoscopic surgical tool having a surgical tool 28 and a viewing device 14 fit through a port of the laparoscopic surgical tool. Prima facie case is made that Mullick et al disclose at paragraph [0071] the remote control micro robot with mobilization elements 140 and 142 and a video system for internal diagnostic functions. Mullick et al do not disclose the invasive surgery function of the micro robot, but it does not limit the invasive surgery function of the micro robot with the wheel mobilization elements because Mullick et al disclose at paragraph [0080] the tool 300 can include biopsy forceps or retractable snares for purposes like polypectomy. Since El Gazayerli shows the minimally invasive fundoplication device with a viewing device and a surgical tool, it would have been obvious to one of ordinary skill in the art to use Mullick et al's micro robot with a surgical tool for minimally invasive

Art Unit: 2837

surgery as taught or suggested by El Gazayerli and use the laparoscopic surgical tool as a fit through device for minimally invasive surgery.

With respect to claims 4-6, 35, and 36, Mullick et al show in figure 6 the micro robot wheels 140 and 142. It would have been obvious to one of ordinary skill in the art to modify the wheel with different types mobilization movement elements.

With respect to claims 9 and 18, Mullick et al show in figure 1 the transmitter and receiver circuits for remote control of the micro robot.

With respect to claims 16, 17, 23, 24, and 28, Mullick et al disclose at paragraphs [0059], [0063], and [0064] the image sensor CCD functions. Since Mullick et al disclose at paragraph [0019] that the imaging system is a six degree of freedom pose detection device, it would have been obvious to one of ordinary skill in the art to make the imaging system movable to any orientation position.

With respect to claims 25, 29, and 37, since Mullick et al disclose at paragraph [0079] the retractable lever 304 protruded from the capsule exposing the tool 300, it would have been obvious to one of ordinary skill in the art to provide manipulator joints for a more flexible retractable function of the surgical tools.

With respect to claims 30-34, since Mullick et al disclose at paragraphs [0077], [0080], and [0081] that different surgical tools can be used on the retractable lever 304, it would have been obvious to one of ordinary skill in the art to use Mullick et al's micro robot for different minimally invasive surgery in the animal body cavity for the recited functions as recited in the claims.

***Response to Amendment***

5. Applicant's arguments filed 5/31/2005 have been fully considered but they are not persuasive.

Applicant argues that Mullick et al does not teach a system with a laparoscopic surgical tool. Applicant's argument is incorrect. Mullick et al disclose at paragraphs [0077] to [0082] that different tools can be used on the retractable lever for "the rest of the human body" [0077] line 5. It would have been obvious to use a laparoscopic surgical tool as an applicator for introducing the micro robot into the human body. Applicant further argues that the Examiner has not indicated where in Mullick et al taught the claimed features. Applicant's attention is directed to the pervious paragraphs for the taught subject matters. Applicant further argues that Mullick et al's imaging device is fixed within the capsule without any indication of the imaging device being movable relative to the capsule's body to adjust a position of the imaging device. Applicant's attention is directed to Mullick et al paragraph [0087] that miniature motors allow the imaging system to be reorientated, or provide some form of "controlled mobility"... Mullick et al teach the imaging system can be movable as recited in the claims.

Applicant further argues that Mullick et al fails to teach each or every limitation of a mobilization assembly for actively moving a body of a micro robot during surgery along a surface within an open space inside an animal body. Applicant's argument is not persuasive. Applicant's attention is directed to Mullick et al figures 6-8. Mullick et al shows different configurations of the micro robot for different environments. It is

obvious to one of ordinary skill in the art that the different configurations of the micro robot do not limit the mobility of the micro robot within only a particular environment such as intestine instead of another cavity of the human body. Mullick et al disclose at paragraph [0077] that the micro robot can be operated at the rest of the human body.

Applicant argues that Mullick et al discloses procedures that are non-invasive, non-interventional since a capsule is simply ingested. Applicant's argument is not persuasive. Mullick et al discloses procedures that are non-invasive. However, Mullick et al further discloses that different types of surgical tools can be attached to the retractable lever. One of ordinary skill in the art would be able to use Mullick et al's micro robot for different minimally invasive surgery according to the surgical tools attached to the retractable lever for the intended purpose.

Applicant's argument is not persuasive. The claims do not define any patentable structure other than a surgical micro robot with wheels, camera, and a retractable tool. The claims fail to define any particular structure of the invention to make the claims patentable distinct from the references of the record.

#### ***Citation of Pertinent References***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patents or publications to Lemelson (6,400,980 or 6,286,514 or 6,327,492, 6,321,106 or 6,293,282 or 6,233,474 or 6,058,323 or 5,845,646), Brock et al (2003/0045888 or 2001/0018591), Sunaoshi (2004/0254680), Ghorbel et al

Art Unit: 2837

(2004/0173116), and Miyake (4,568,311) disclose surgical imaging devices and micro robot devices.


***Communication Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Ip whose telephone number is (571)-272-1941.

The examiner can normally be reached on Monday to Friday from 6:30 am to 3:00 pm Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (571)-272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Paul Ip  
Primary Examiner  
AU 2837